

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. When strikethrough cannot easily be perceived, or when five or fewer characters are deleted, [[double brackets]] are used to show the deletion. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered). Please AMEND claims 16, 17 and 23 and ADD new claims 24-25 in accordance with the following:

1-15. (cancelled)

16. (currently amended) A method of determining spatially similar portions of substances by analyzing three-dimensional structures of the substances including a first structure expressed by three-dimensional coordinates of elements belonging to a first point set and a second structure expressed by three-dimensional coordinates of elements belonging to a second point set and automatically determining a distance between the elements of the first point set and the elements of the second point set that have an optimal correspondence, comprising ~~the steps of:~~

a) dividing the first point set and second point set into first subsets and second subsets, respectively, according to a secondary structure exhibited by the three-dimensional coordinates of the elements of the first and the second point sets;

b) generating a combination of correspondence satisfying a first restriction condition between the first subsets and the second subsets from among candidates for the combination of correspondence;

c) determining an optimum correspondence between the elements belonging to each pair of subsets corresponding in the combination of correspondence generated in the step b); and

d) calculating a root mean square distance between all of the elements corresponding in the optimum correspondence in the step c).

17. (currently amended) A The method of claim 16, wherein determining the optimum correspondence determiningcomprises step comprising the substeps of:

i) generating a combination of correspondence satisfying a second restriction condition between the elements belonging to the subsets corresponding in the combination of the correspondence generated in the step b);

ii) calculating a root mean square distance between the elements corresponding in the combination of the correspondence generated in the substep i) satisfying the second restriction condition; and

iii) selecting a combination of the correspondence as the optimum correspondence according to the value of the root mean square distance value calculated in the substep ii).

18-22. (cancelled)

23. (currently amended) An apparatus for determining spatially similar portions of substances by analyzing three-dimensional structures of the substances including a first structure expressed by three-dimensional coordinates of elements belonging to a first point set and a second structure expressed by three-dimensional coordinates of elements belonging to a second point set and automatically determining a distance between the elements of the first point set and the elements of the second point set that have an optimal correspondence, comprising:

means for dividing a dividing unit to divide the first point set and the second point set into first subsets and second subsets, respectively, according to a secondary structure exhibited by the three-dimensional coordinates of the elements of the first and the second point sets;

means for generating a generating unit to generate a combination of correspondence satisfying a first restriction condition between the first subsets and the second subsets from among candidates for the combination of correspondence;

means for determining a determining unit to determine an optimum correspondence between the elements belonging to each pair of subsets corresponding in the combination of correspondence generated in the generating means unit, and

means for calculating a calculating unit to calculate a root mean square distance between all of the elements corresponding in the optimum correspondence.

24. (new) A computer-readable medium containing computer-readable instructions to determine spatially similar portions of substances by analyzing three-dimensional structures of the substances including a first structure expressed by three-dimensional coordinates of elements belonging to a first point set and a second structure expressed by three-dimensional coordinates of elements belonging to a second point set and automatically determining a distance between the elements of the first point set and the elements of the second point set that have an optimal correspondence, the computer-readable instructions comprising:

dividing the first point set and second point set into first subsets and second subsets, respectively, according to a secondary structure exhibited by the three-dimensional coordinates of the elements of the first and the second point sets;

generating a combination of correspondence satisfying a first restriction condition between the first subsets and the second subsets from among candidates for the combination of correspondence;

determining the optimum correspondence between the elements belonging to each pair of subsets corresponding in the combination of correspondence generated; and

calculating a root mean square distance between all of the elements corresponding in the optimum correspondence.

25. (new) The computer-readable medium of claim 24, wherein determining the optimum correspondence comprises:

generating a combination of correspondence satisfying a second restriction condition between the elements belonging to the subsets corresponding in the combination of the correspondence generated;

calculating a root mean square distance between the elements corresponding in the combination of the correspondence generated satisfying the second restriction condition; and

selecting a combination of the correspondence as the optimum correspondence according to the value of the root mean square distance value calculated.